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Liphistiid Spiders (Araneae, Mesothelae) of Northwest Thailand¹⁾

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Abstract Three species of the spider genus *Liphistius* SCHIÖDTE, 1849, are recorded from northwestern Thailand. Of these, two are new to science and described under the names of *L. yamasakii* and *L. jarujini*; the remaining one is identified with *L. bristowei* PLATNICK et SEDGWICK, 1984. *Liphistius yamasakii* is closely related to *L. bristowei*, while *L. jarujini* resembles *L. yangae* PLATNICK et SEDGWICK, 1984, described from the Malay Peninsula.

The spider suborder Mesothelae consists of two allopatric families, namely, the Liphistiidae with about a dozen species of the single genus *Liphistius* SCHIÖDTE, 1849, distributed in eastern Burma, Thailand, the Malay Peninsula and Sumatra, and the Heptathelidae with several species of two genera, *Heptathela* KISHIDA, 1923, and *Ryuthela* HAUPT, 1983, occurring in Southwest Japan, Southeast China and northern Vietnam. Through a revisional work on the genus *Liphistius* recently published by PLATNICK and SEDGWICK (1984), fourteen species became known from the regions delineated above. However, only two of them were recorded from Thailand, in spite of the fact that peculiar habitats favourable for these spiders are widespread in the hilly areas of this country. The known species are: *Liphistius bristowei* PLATNICK et SEDGWICK, 1984, from an elevation of 1,100 m on Doi Suthep, Chiang Mai, northwestern Thailand, and *L. trang* PLATNICK et SEDGWICK, 1984, from an elevation of 100 m in Krachang Forest near Trang, southern Thailand. Besides, a photograph of a third Thai species was published by MATSUMOTO and others (1976), though its scientific name was not determined.

In the summer (July–September) of 1987, I had an opportunity to participate in a zoological expedition to Malaysia and Thailand made by the National Science Museum, Tokyo. Many spider specimens including more than 50 individuals of liphistiids were obtained during the research trip from various parts of Thailand and the eastern part of the Malay Peninsula. The present paper is the first part of the results of systematic studies on the materials thus obtained. It contains a note on a new collecting record and illustrations of *Liphistius bristowei* and descriptions of two new species of the same genus from the mountainous regions of the Chiang Mai and Muzng Districts, northwestern Thailand.

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The abbreviations used in this paper are as follows: ALE, anterior lateral eye; AME, anterior median eye; PLE, posterior lateral eye; PME, posterior median eye.

Before going further, I wish to express my sincere thanks to all the staff of the Thailand Institute of Scientific and Technological Research, Bangkok, especially to Dr. Niphan RATANAWORABHAN and Mr. Jarujin NABHITABHATA, and to the members of the research trip, especially to Professor Masataka SATÔ, Professor Tsukané YAMASAKI, Dr. Masatsune TAKEDA and Dr. Mamoru OWADA, for their kind aid in my field researches. My special thanks go to Dr. Shun-Ichi UÉNO, National Science Museum, Tokyo, for his generous support in this study and for reading the manuscript of this paper.

Genus *Liphistius* SCHIÖDTE, 1849

Liphistius bristowei PLATNICK et SEDGWICK, 1984

(Figs. 1–5)

Liphistius birmanicus: BRISTOWE, 1975, Nat. Hist. Bull. Siam Soc., **26**, p. 166; 1976, J. Zool. Lond., **178**, p. 4 (nec *L. birmanicus* THORELL, 1897).

Liphistius n. sp. B: HAUPT, 1983, Z. zool. Syst. Evol.-Forsch., **21**, p. 281.

Liphistius bristowei PLATNICK et SEDGWICK, 1984, Amer. Mus. Novit., (2781), p. 12 (type locality: Doi Suthep, Chiang Mai, Thailand).

Specimens examined. 4 ♀♀ 1 ♂, Maeo Khun Klang, 1,260 m alt., Chiang Mai, Thailand, 3~7-IX-1987, H. ONO leg. (NSMT-Ar 1873–1877).

Note. Several specimens of this species were collected at an elevation of 1,260 m at the foot of Mt. Doi Inthanon, ca 50 km SW apart from the type locality. Though the present specimens are remarkably larger in body length (♀ 13.5–20.5 mm, ♂ 15.6 mm) than those recorded by PLATNICK and SEDGWICK (1984) in their original description (♀ 11.2 mm, ♂ 13.0 mm), no difference in the genital organ has been recognized between this new material and the original illustration.

Liphistius yamasakii sp. nov.

(Figs. 6–9)

Description (based on the holotype and allotype). Measurement (mm):— Body length ♀ 26.21, ♂ 19.55; prosoma length ♀ 11.51, ♂ 9.39, width ♀ 10.30, ♂ 8.79; opisthosoma length ♀ 13.19, ♂ 9.70, width ♀ 11.06, ♂ 7.65. Sternum length ♀ 5.75, ♂ 3.70, width ♀ 3.40, ♂ 1.75. Lengths of palp and legs (♀/♂):

	Tarsus	Metatarsus	Tibia	Patella	Femur	Total
Palp	5.61/3.94	—	5.00/6.21	3.79/3.18	7.27/5.61	21.67/18.94
Leg I	2.73/3.79	4.77/ 7.20	5.00/6.06	4.39/4.02	8.64/8.33	25.53/29.40
II	2.80/4.02	5.15/ 8.33	5.30/6.67	4.55/4.09	8.33/8.48	26.13/31.59
III	3.64/4.55	6.36/ 9.55	5.00/6.67	4.39/3.78	8.18/8.33	27.59/32.88
IV	5.15/6.06	10.60/13.64	7.27/8.03	5.30/4.24	10.98/9.70	39.30/41.67.

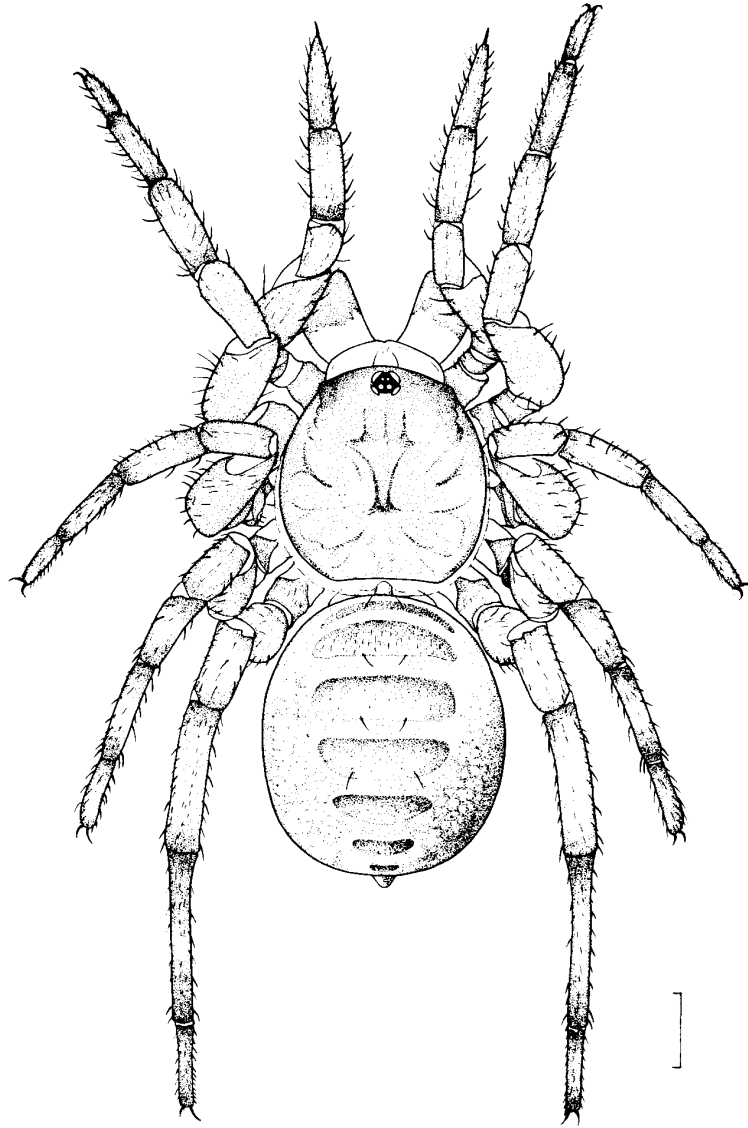
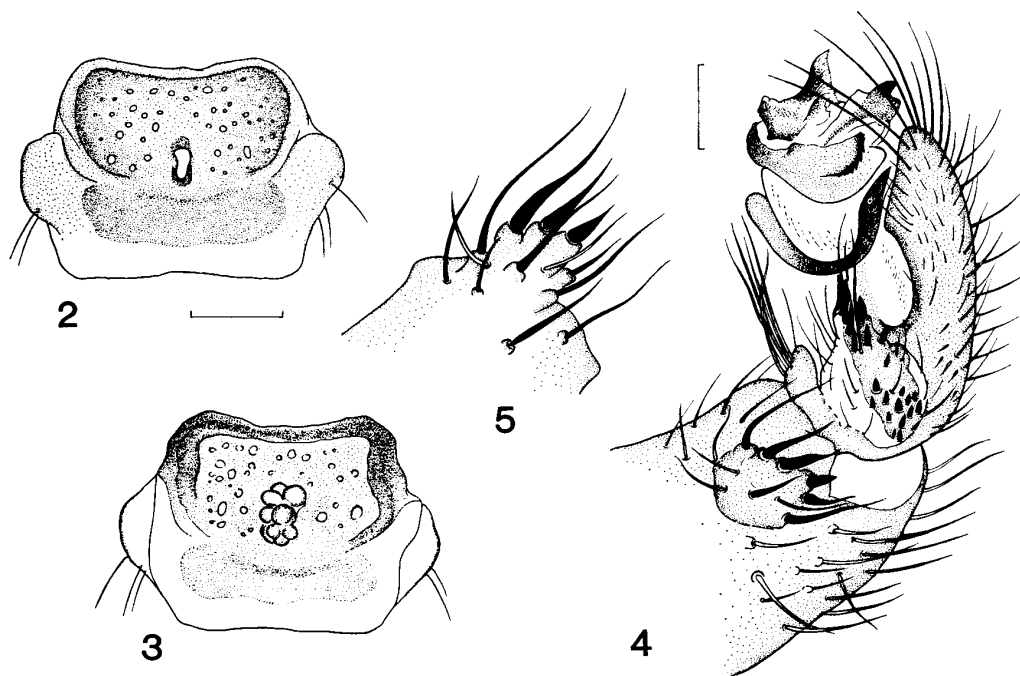


Fig. 1. *Liphistius bristowei* PLATNICK et SEDGWICK, 1984; habitus of female. (Scale: 3 mm.)

Prosoma. Ocular tubercle slightly wider than long (length/width ♀ 1.08, ♂ 1.10), ALE>PLE>PME>AME (♀ 37: 29: 20: 6, ♂ 33: 25: 19: 3), AME-AME/AME-ALE ♀ 0.70, ♂ 0.75, PME-PME/PME-PLE ♀ 1.00, ♂ 1.25, ALE-ALE/PLE-PLE ♀ 0.26, ♂ 0.38, ALE-ALE/ALE-PLE ♀ 1.40, ♂ 1.60, median ocular area trapezoidal, length/width ♀ 0.84, ♂ 1.14, wider behind than in front (anterior width/posterior width ♀ 0.46, ♂ 0.55), clypeus narrow, clypeus/ALE-ALE ♀ 1.71, ♂ 0.63. Chelicera of female with 14 teeth on promargin of fang furrow, that of male with 9 teeth. Superior claws of tarsi of legs each with five teeth, excepting those of legs I and II in female which bear four teeth; inferior claws of tarsi of female legs each with one denticle, those of male each with two denticles. Claw of tarsus of female palp with four denticles.



Figs. 2–5. *Liphistius bristowei* PLATNICK et SEDGWICK, 1984. — 2. Female genitalia, dorsal view. 3. Same, ventral view. 4. Male palp, retroventral view. 5. Tibial apophysis of male palp, retrolateral view. (Scale: 0.5 mm.)

Male palp (Figs. 8–9). Tibial apophysis developed, with three long and one short strong spines on subterminal ledge (Fig. 9). Paracymbium with many short strong spines, prolateral tegular apophysis wide and truncate, subtegulum much larger than that of *Liphistius bristowei* (Figs. 4, 8).

Opisthosoma slightly longer than wide, globular.

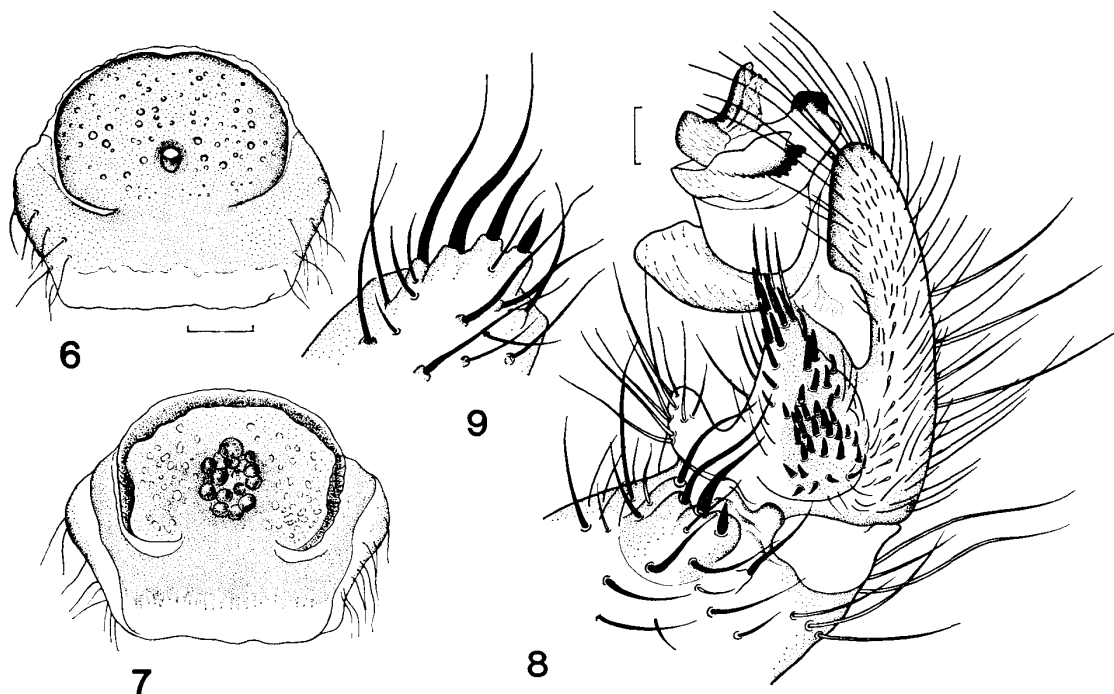
Female genitalia (Figs. 6–7). Antrodorsal pore-plate much wider than long, oval, with small gland pores, spermatheca small, racemose.

Coloration and markings. ♀: Prosoma blackish brown without distinct marking, lighter at the middle, ocular tubercle black, chelicera blackish brown, proximally yellowish brown; coxa of palp and labium yellowish brown, the other part of palp, sternum and legs blackish brown, legs without distinct annulations. Opisthosoma dark greenish brown, dorsal sclerites black, ventral sclerites and spinnerets blackish brown. ♂: Almost the same as in female, somewhat lighter.

Variation. Body length of female 21.15–28.18 mm.

Type series. Holotype: ♂, allotype: ♀, and 6 ♀♀ paratypes, Doi Inthanon, 1,700 m alt. between Maeo Khun Klang and Mae Chaem, Chiang Mai, Thailand, 6–IX–1987, T. YAMASAKI and H. ONO leg. (NSMT-Ar 1894–1900). All the types are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Range. Known only from the type locality.



Figs. 6–9. *Liphistius yamasakii* sp. nov. — 6. Female genitalia, dorsal view. 7. Same, ventral view. 8. Male palp, retroventral view. 9. Tibial apophysis of male palp, retrolateral view. (Scale: 0.5 mm.)

Remarks. This new species is closely related to *Liphistius bristowei* (Figs. 1–5), but can be distinguished from the latter by the large body size, and the different shape of the pore-plate of female genitalia and the male palp, especially that of the tegulum. The type locality of *L. yamasakii* marks the highest altitudinal record in the suborder Mesothelae. The specimens were obtained from a road cut through a forest reserve.

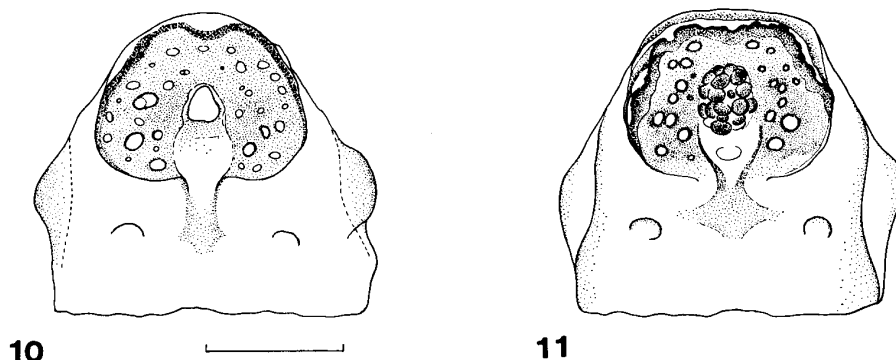
This new species is named after Professor Tsukané YAMASAKI, Tokyo Metropolitan University.

***Liphistius jarujini* sp. nov.**

(Figs. 10–11)

Description (based on the female holotype; male unknown). **Measurement** (mm):— Body length 16.67; prosoma length 8.79, width 8.18; opisthosoma length 8.33, width 7.88. Sternum length 4.00, width 1.38. Lengths of legs (legs I–II and palps missing):

	Tarsus	Metatarsus	Tibia	Patella	Femur	Total
Leg III	2.58	4.84	3.94	3.33	6.06	20.75
IV	3.79	7.73	5.45	3.94	8.33	29.24



Figs. 10–11. *Liphistius jarujini* sp. nov. — 10. Female genitalia, dorsal view. 11. Same, ventral view. (Scale: 0.5 mm.)

Prosoma. Ocular tubercle wider than long (length/width 0.87), $ALE > PLE > PME > AME$ (29: 25: 15: 5), $AME-AME/AME-ALE$ 0.67, $PME-PME/PME-PL$ 0.75, $ALE-ALE/PLE-PL$ 0.24, $ALE-ALE/ALE-PL$ 1.67, median ocular area trapezoidal, length/width 0.70, anterior width/posterior width 0.39, clypeus/ $ALE-ALE$ 2.25. Chelicera damaged. Superior claws of tarsi of legs III and IV each with three teeth, inferior claws each with one denticle.

Opisthosoma slightly wider than long, pyriform, wider behind.

Female genitalia (Figs. 10–11). Antrodorsal pore-plate slightly wider than long, wider in posterior part, gland pores relatively large, spermatheca racemose, internal plate with a pair of shallow cavities in the posterior part.

Coloration and markings. Prosoma brown, bordered with yellowish brown, lighter at the middle; ocular tubercle black; coxae and sternum yellowish brown; legs blackish brown, tibiae and metatarsi with a white annulation respectively. Opisthosoma blackish brown, mottled with light brown, dorsal sclerites blackish brown, ventral sclerites and spinnerets yellowish brown.

Holotype: ♀, Taksin Maharat National Park, 950 m alt., ca 30 km W of Tak, Muzng, Thailand, 2–IX–1987, H. ONO leg. (NSMT-Ar 1878).

Range. Known only from the type locality.

Remarks. This new species resembles *Liphistius yangae* PLATNICK et SEDGWICK, 1984, described from Kaki Bukit, Perlis, Malaysia, but differs from the latter in having a pair of cavities on the internal plate of female genitalia.

This species is dedicated to Mr. Jarujin NABHITABHATA, Bangkok.

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